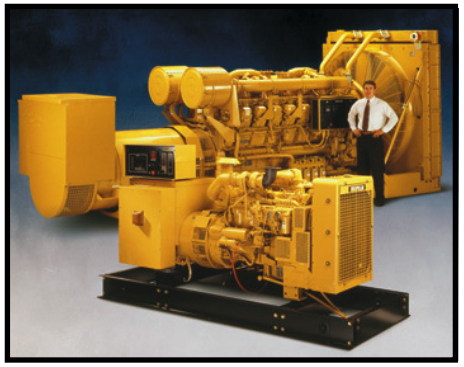
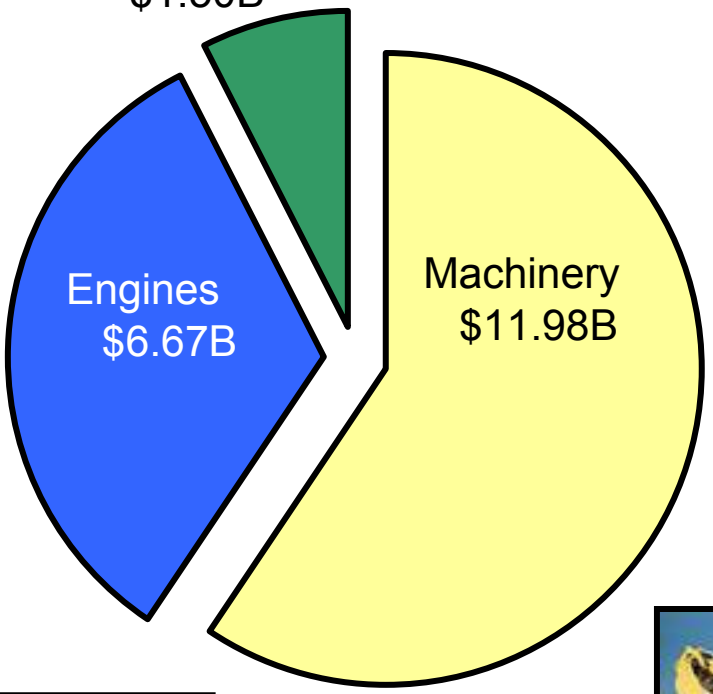
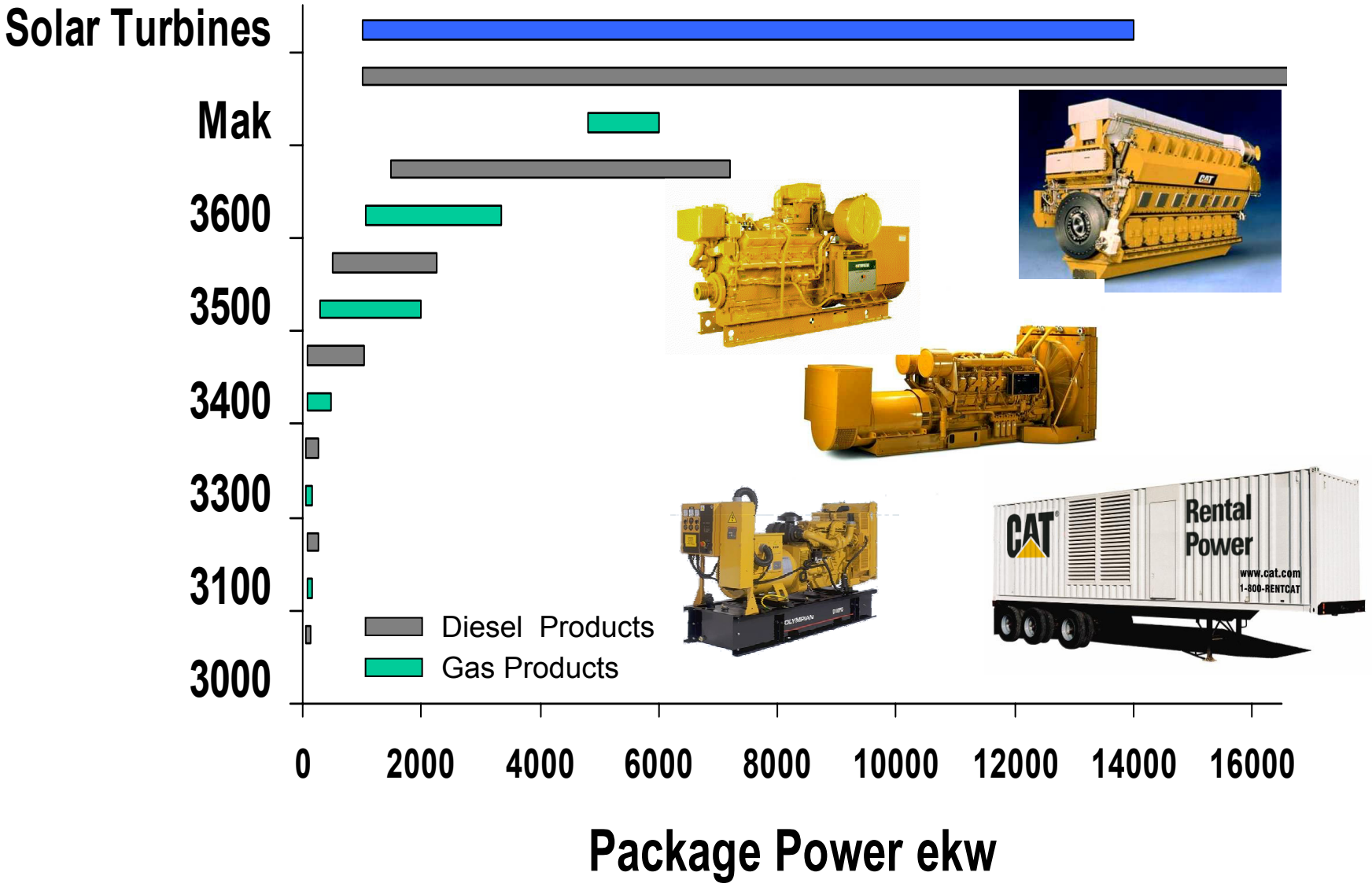
Caterpillar Inc $20.15B

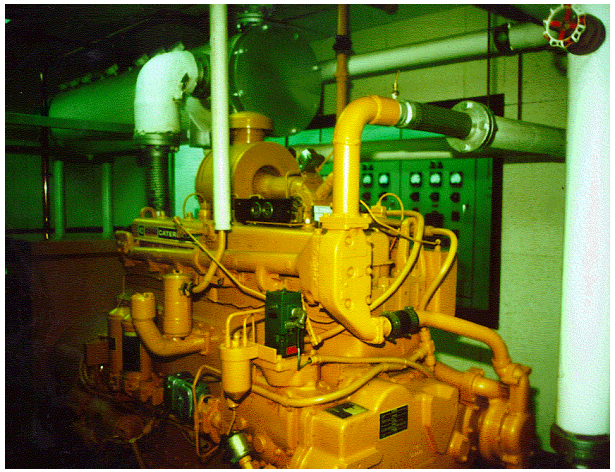




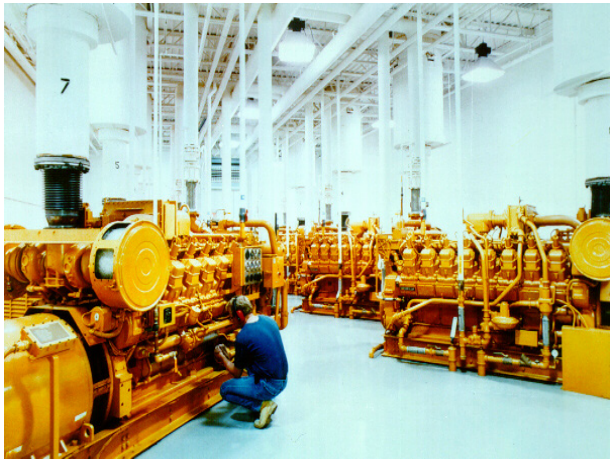
Caterpillar Power Products



Caterpillar Power Applications



School CHP Application
High School in Kansas
300 ekw
Installed 1970's
~ 65% CHP Efficiency



Industrial CHP Application
Plastics facility in Chicago
5.6 MW Total
Installed 1996
~ 70% CHP Efficiency

Denmark CHP
City Heat and Power
6.1 MW
Installed 2001
94% CHP Efficiency

Caterpillar Power Applications

Dixon Marquette Cement
Installed 1992

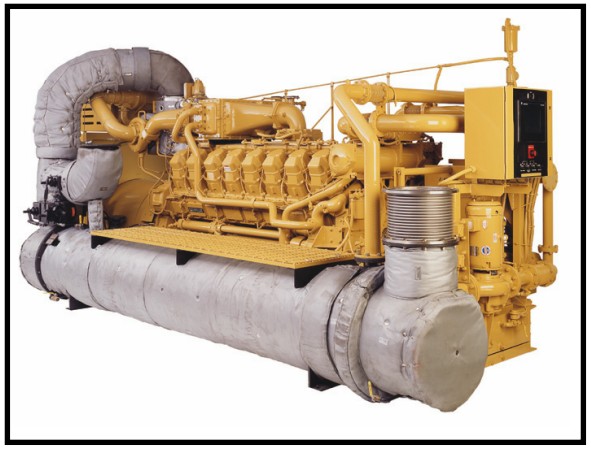
14.1MW Peak Shaving

343M kw-hr produced
98.7% Uptime
9am – 10 pm operation
5 days / week

Navistar International
Installed 1994

9.2MW Cogeneration

$2.0M annual cost savings
3.4 year payback
30 psi Steam Heat



Presbyterian Homes
Installed 1999

2.4MW Cogeneration

$2M Total installed cost
5.3 year payback
12 psi steam heat
10 month installation cycle.

1250 eKW Recip Application

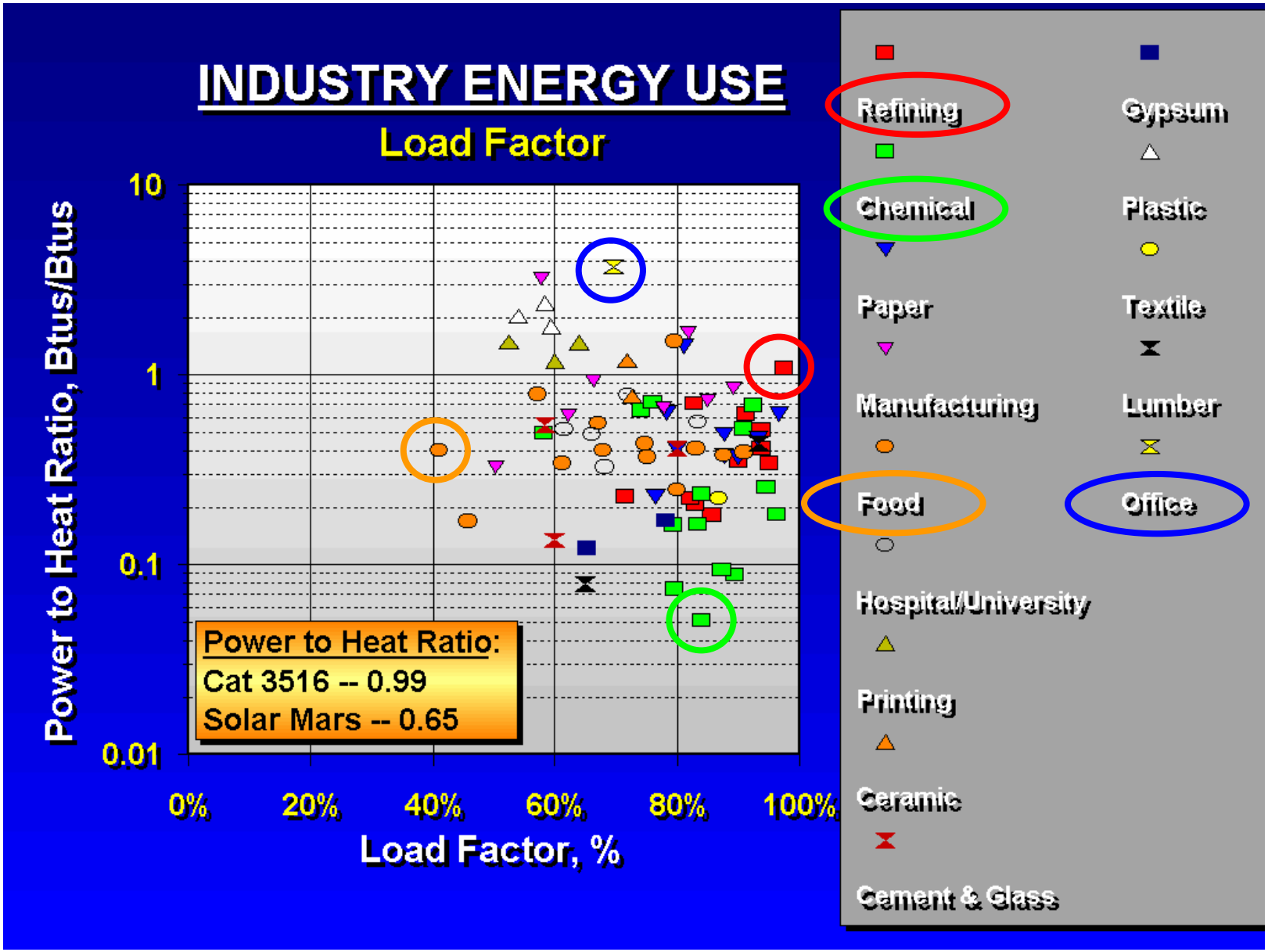
70% - 85% Total Efficiency
$600 - $800 / Ekw Delivered

System	Conversion	Result	
Mechanical	100%	41%	
Exhaust	75%	26%	
Aftercooler	80%	7%	39%
Jacket Water	80%	6%	
Oil Clr / Rad	0%	0%	
TOTAL		80%	

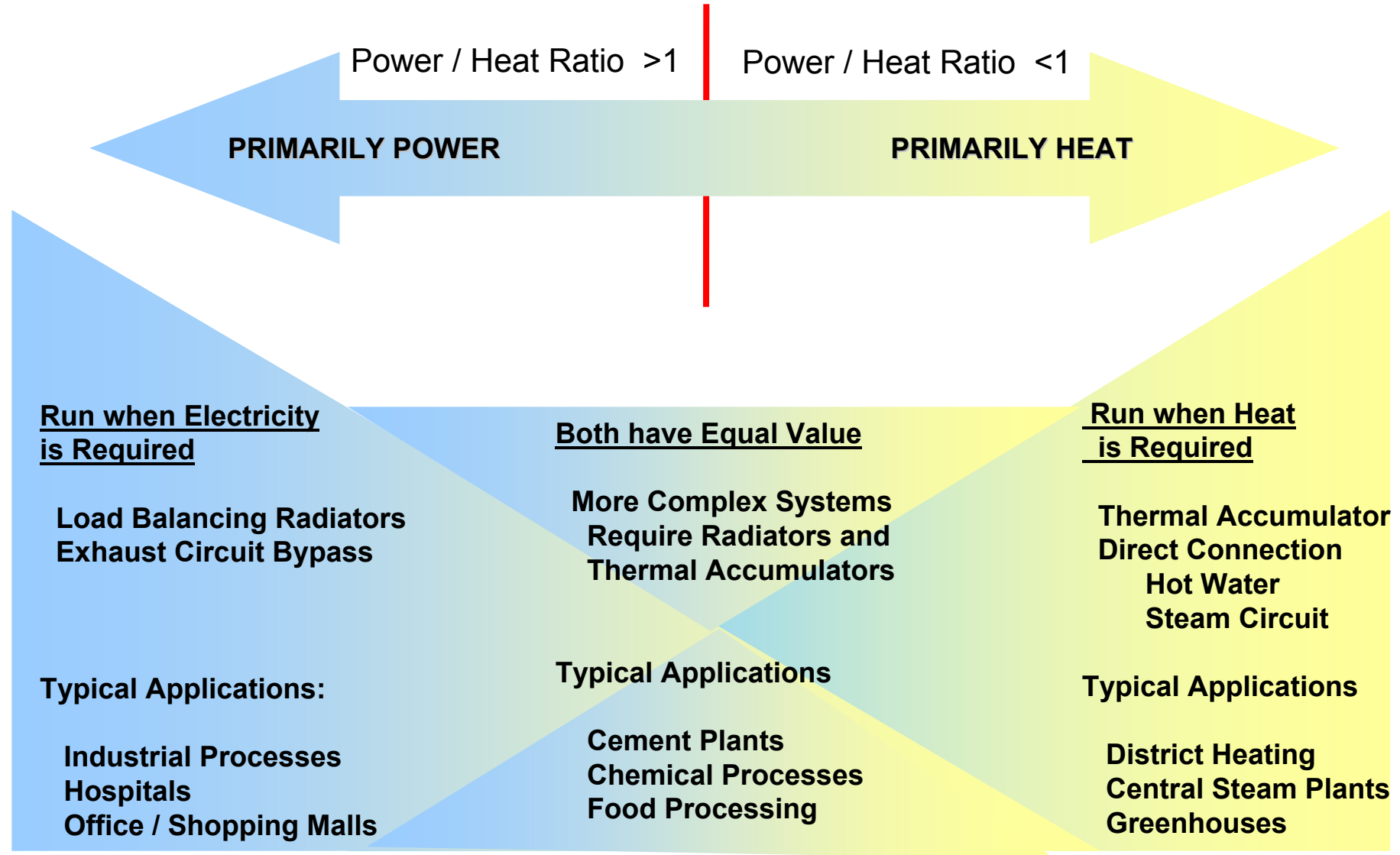
Power / Heat Ratio = 41/39 = 1.05

Typical Engine Ratio = 0.6 – 1.5
Typical Turbine Ratio = 0.3 – 0.8

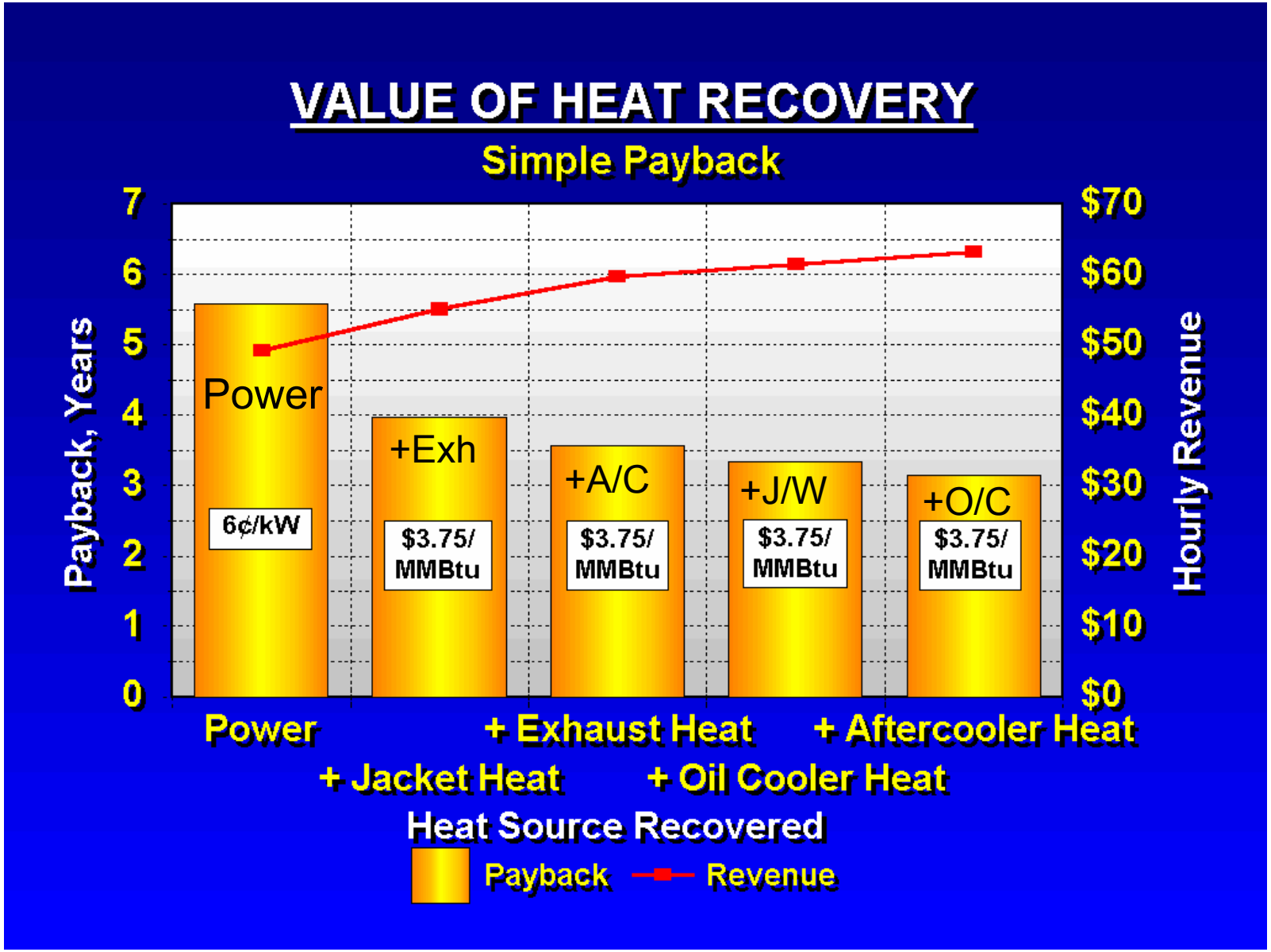
Heat Recovery Industries



Combined Heat and Power Trade-Off's



Heat Recovery Benefits



Case Study 1: City of Riverside, CA

3.3 MW Digester / Landfill / Natural Gas

- 24/7 Continuous Duty Application
- 3 x 1.1 MW Gas Gensets (2000)
- 13,000+ hours on each unit to date

- City buys and has system installed
  - Generators, CHP, Chillers, Controls
  - Fuel Processing, Compressors, Cooling
    - $5M Investment
- Connected to Riverside municipal grid
- Complete maintenance and service contract provided by Cat dealer Johnson Power
- Payback between 5 – 6 years

Benefits for Municipal Utility

- Grid dupport during peak loads
- Utilize gas from City landfill for power
- Defer improvements in distribution

Benefits for Water Treatment Plant

- CHP heat for increased digester output
  - Displaced old gas boilers
  - Fuel Savings / Reliability
- CHP chilling for facility
- Utilize gas from landfill and digester
- Average 85% - 90% Uptime
- Standby / island Capability

"Anyone who wants to build a facility like this, give me a call."
Charles Sperino 909-351-6140

Case Study 2: NASA / FPL, Florida

10MW Standby / Peaking Application
5 x 2.0 MW Diesel Gensets (1999)

- FPL buys / installs equipment
  $6.84M, including removal of old equipment and facility upgrades, all in an 88 day construction cycle
- NASA leases for 10 years, then owns
  Payment via reduced power costs ($780K/yr)
- FPL dispatches during high demand periods
- NASA receives general rate discount for dispatch
- NASA provides own maintenance and service work

Benefits for NASA

- Standby power at their facility at no capital cost
- Contract Rate reductions in overall energy costs
- Powerplant ownership via long term rate reductions.

Benefits for Florida Power and Light

- On-demand peaking plant dispatched by FSL
- Long term energy contract with major customer
- Deferment of costly T&D upgrades

Next - NASA 10MW plant with portable power modules

Case Study 3: Meridian NAS, MS

9.4 MW Peaking / Standby System
5 x 1.875MW Diesel Gensets (1998)

- TVA buys / installs generators
  - $3.5M substation, $0.7M infrastructure
  - Local power distribution system
- TVA dispatches as needed from Chattanooga
  - 7MW NAS load, 2.4 MW exported
- NAS under ESP rate schedule (12% min rate reduction)
- Savings reinvested into NAS grid infrastructure
- Complete maintenance and service support provided by Cat dealer Thompson Power

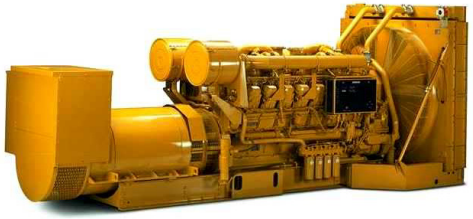
Benefits for Meridian NAS

- $4.2M power system near their facility at no capital cost
- 23% reduction in annual $2.2M energy costs ($506K / year)
- Increased viability as a federal facility

Benefits for EMEPA / TVA

- Voltage sag elimination at end of 23 mile line
- Power plant located in Mississippi at load site
- Long term relationship with largest customer

Second powerplant installed at Ole Miss in Oxford, MS.

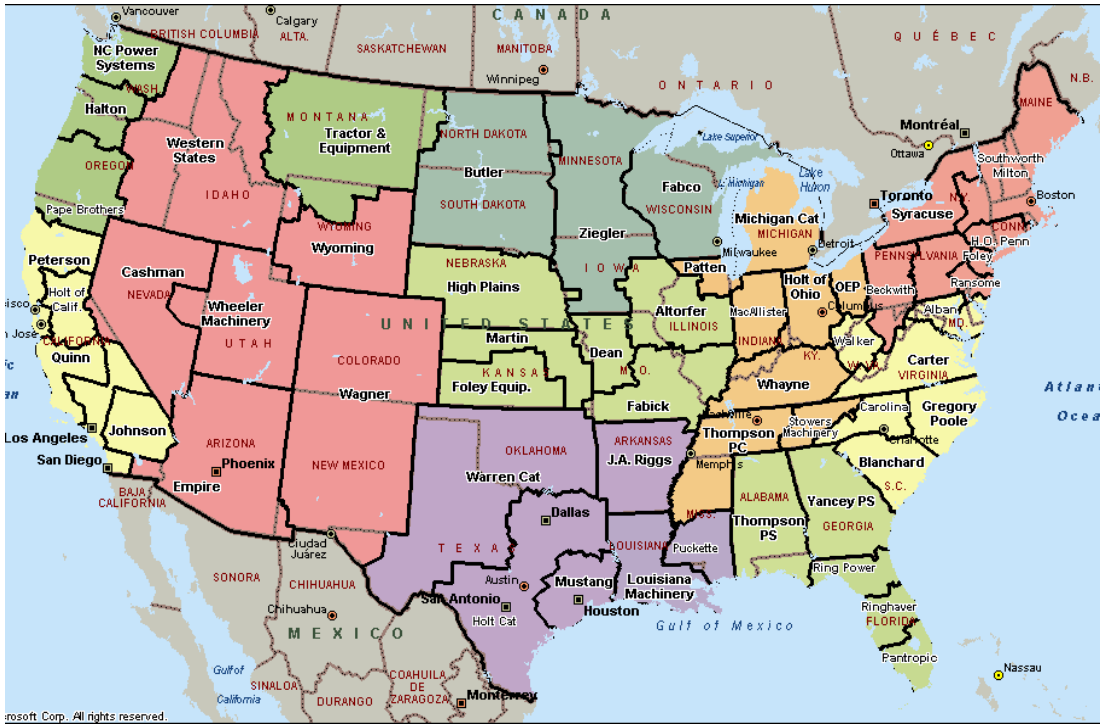


Defense & Federal Products Division

✓Specific Caterpillar division to support US Government requirements.
Machines, Engines, Power Generation

✓Packaged and shipped 150 units with 175MW of power

✓Sales and Service through
64 Caterpillar Dealers
517 Branch Stores
34,000 Employees
$3.5B Net Worth



Further Information:

www.Cat.com/products, or
Bill Lucas at 309-578-3651

THANK YOU!